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Case Study I

Data Analytics w

“Real-Time Analysis of Bar



In the digital age, data has become an invaluable asset in the banking sector. The proposed project, "Real-time Customer Analytics," aims to leverage PowerBI, a leading business intelligence tool, to analyze real-time customer data. This project will enable the bank to understand customer behavior, preferences, and trends, thereby making and enhancing customer satisfaction. The project will also enable the bank to respond promptly to changes in customer needs and identify opportunities for cross-selling and up-selling, and to meet customer needs. The project will also contribute to the digital transformation in the banking sector, promoting customer-centricity.

Sr. flo.	Table of Contents
1	Chapter 1: Introduction
2	Chapter 2: Services and Tools Required
3	Chapter 3: Project Architecture
4	Chapter 4: Modeling and Result
5	Conclusion
6	Future Scope
7	References
8	Links



CHAPTER 1

INTRODUCTION

1.1 Problem Statement

In today's competitive banking landscape, understanding customer preferences is crucial for customer retention and growth. Banks often face challenges in analyzing customer data due to the volume and diversity of data generated. Traditional data analysis methods are unable to provide real-time insights. This lack of real-time insights creates opportunities for customer engagement, cross-selling, and revenue generation and customer satisfaction. The diversity of customer data, which includes transactional, demographic data, pose additional challenges for



- Trend Analysis: The dashboard will identify user behavior.
- Predictive Analysis: It will use historical data to predict future trends.

1.4 Advantages

- Data-Driven Decisions: Banks can make informed decisions based on data analysis.
- Improved Customer Engagement: Understanding customer needs can help banks engage with their customers more effectively.
- Increased Revenue: By identifying opportunities for cross-selling and upselling, banks can increase their revenue.

1.5 Scope

The scope of this project extends to all banking services provided by the bank for decision-making and customer engagement. The project aims to incorporate more data sources and advanced analytics, including machine learning and artificial intelligence, to provide more personalized services to customers. The project also has the potential to



CHAPTER 2

SERVICES AfID TOOLS REQUIRED

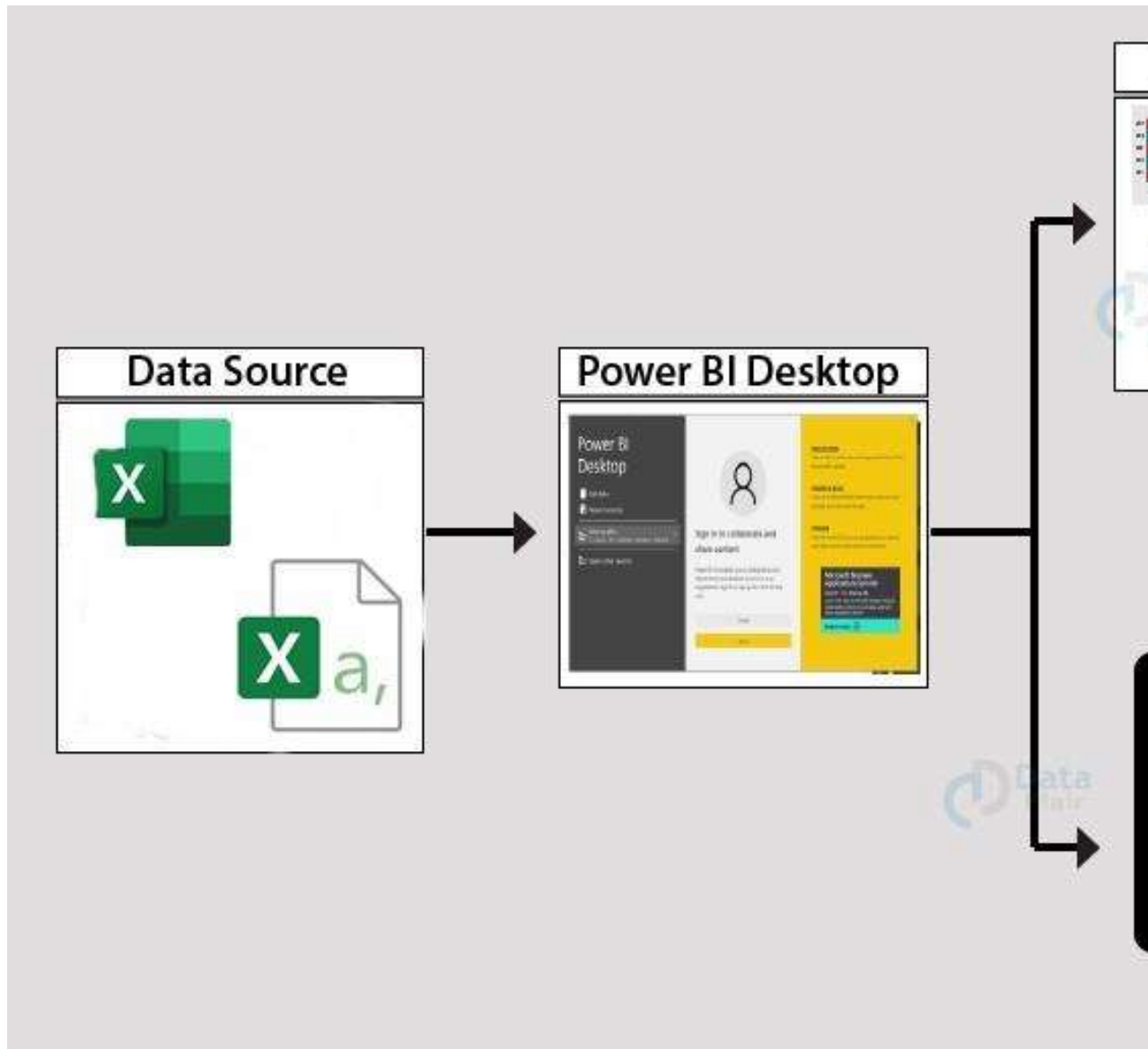
2.1 Tools and Software used

Tools:

- PowerBI: The main tool for this project is Power BI, which provides interactive dashboards for real-time data visualization.
- Power Query: This is a data connection technology that allows users to connect, combine, and refine data across a wide range of sources.

Software Requirements:

- PowerBI Desktop: This is a Windows application used for data analysis and visualization.



Here's a high-level architecture for the project:

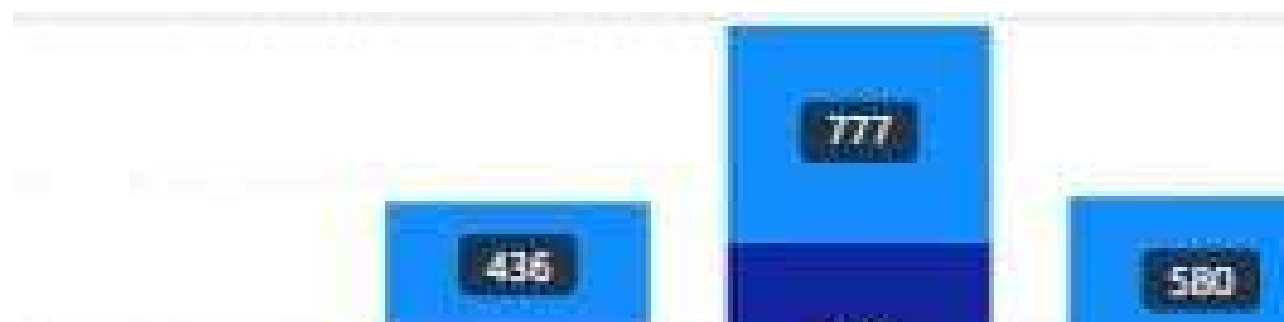
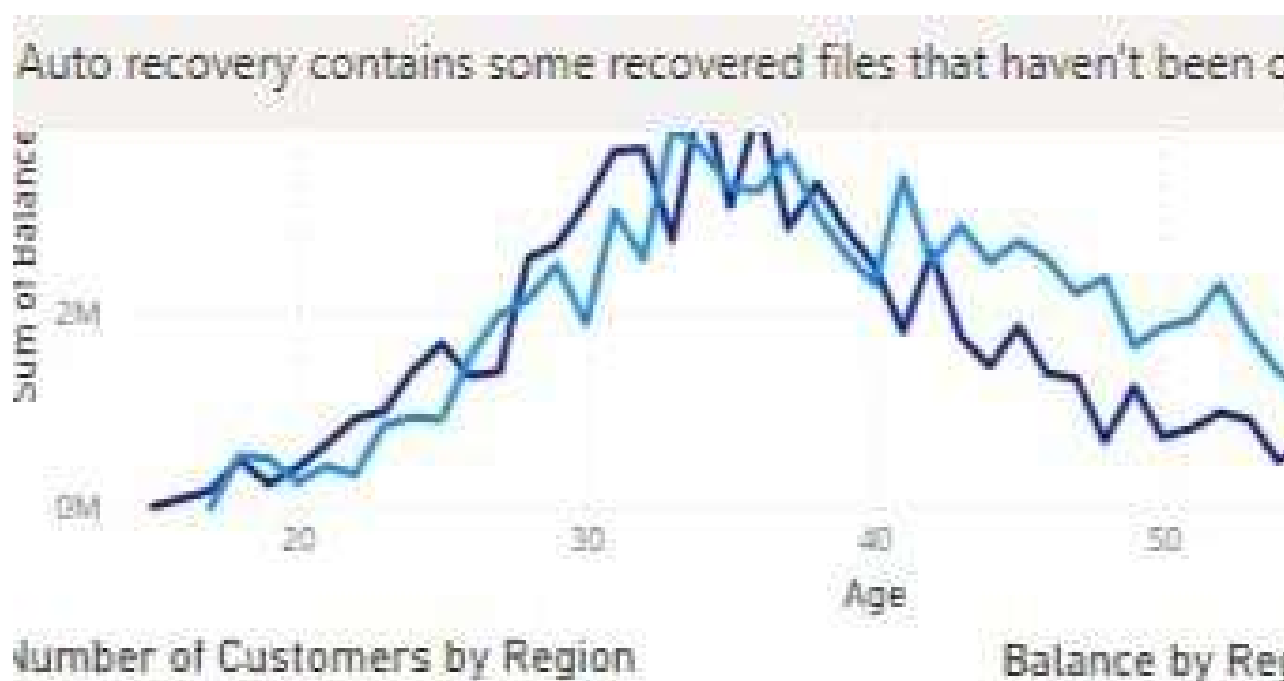
1. Data Collection: Real-time customer data is collected from various sources such as transactions, customer interactions, etc. This data is then processed using tools like Azure Event Hubs or AWS Kinesis.
2. Data Storage: The collected data is stored in a cloud storage service like Amazon S3 or Azure Blob Storage. A Database or AWS RDS can be used for this purpose.
3. Data Processing: The stored data is then processed using tools like Apache Spark or Databricks.



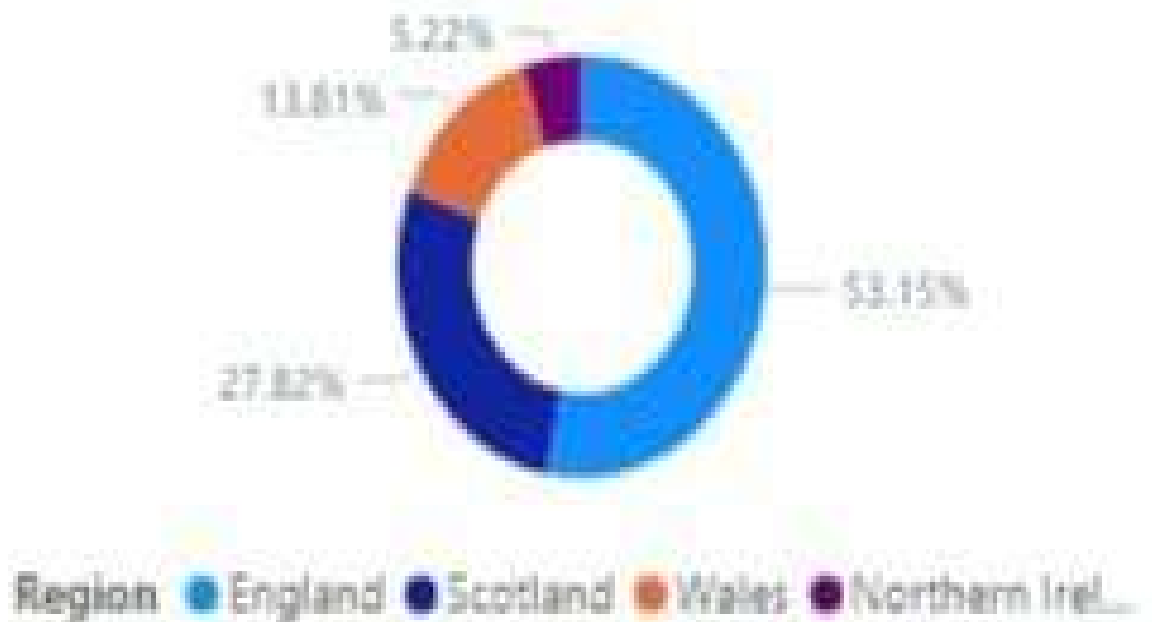
CHAPTER

MODELING AFD RE

VISUALISATION:



Balance by Region



Number of Customers by Job Type

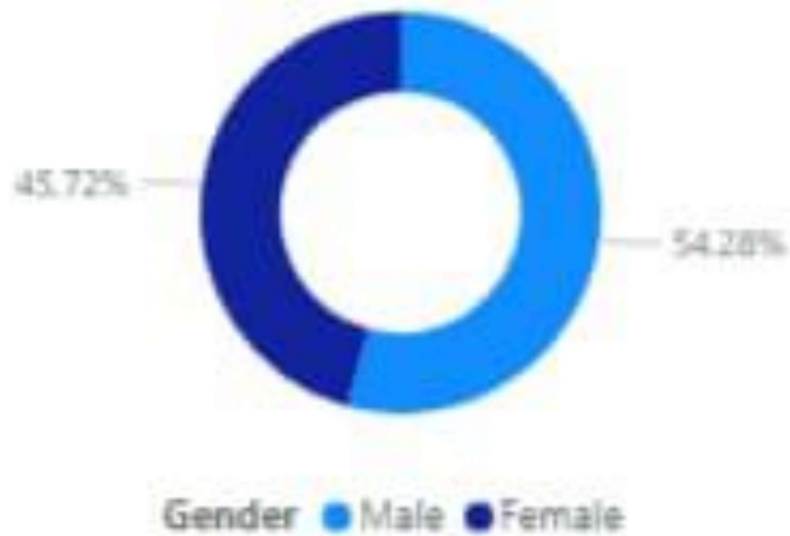




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Number of Customers by Job Type



Date Joined

15

e Min Balance by Age

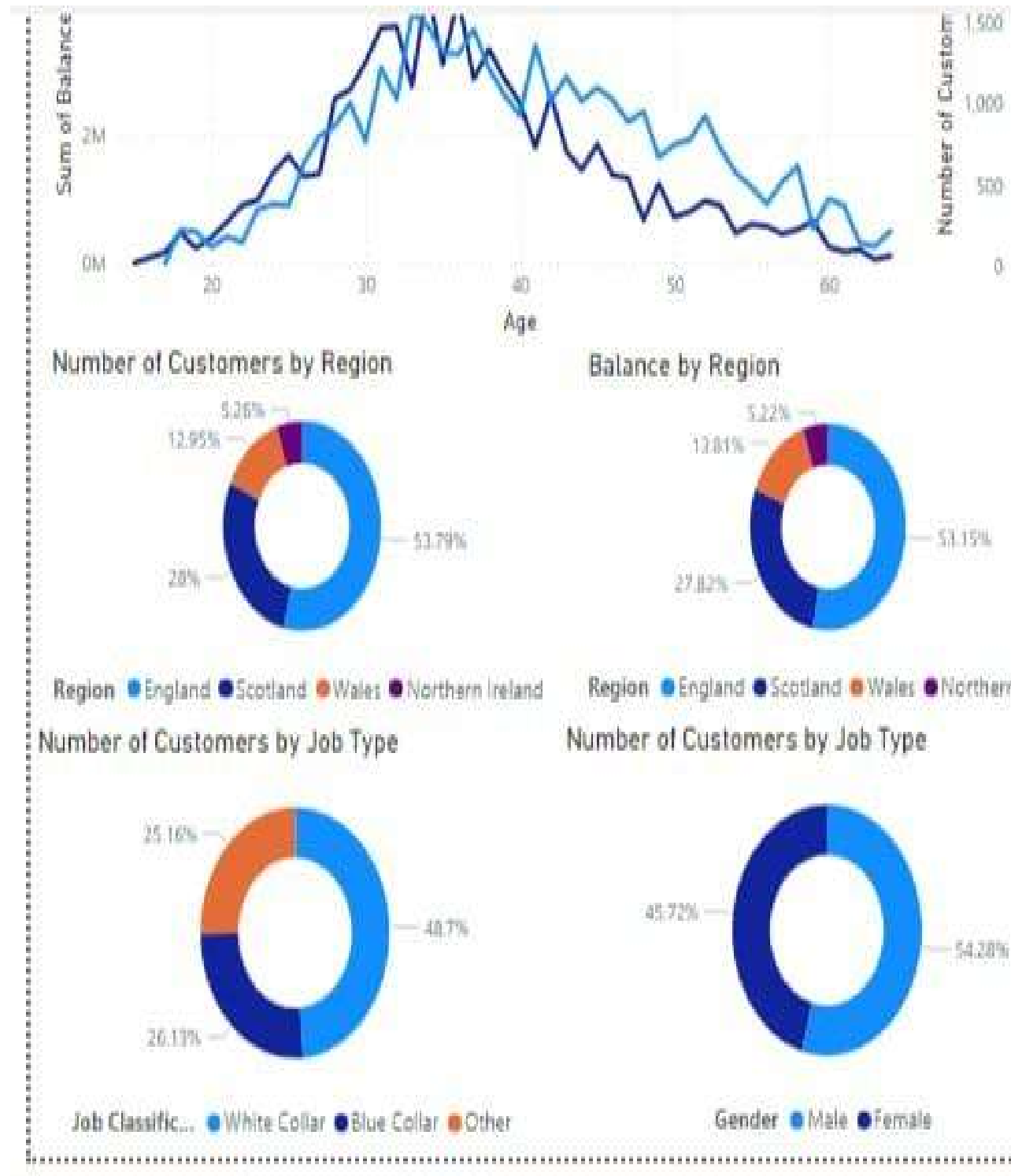
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Dashboard:





FUTURE SCOPE

The future scope of this project is vast. With the integration of machine learning, PowerBI can be leveraged to process and analyze large volumes of data. Integrating these predictive analytics into the system will enable banks to anticipate customer needs and proactively offer personalized services. The system's capability to integrate with various data sources and its ability to incorporate more diverse datasets for a more comprehensive view of customer behavior. As privacy and security become increasingly important, the system should focus on implementing robust data governance policies to ensure the secure handling of sensitive customer data and comply with regulatory requirements. Additionally, the project could explore real-time data streams to provide even more timely and relevant insights, ultimately transforming the way banks interact with their customers.



GITHUB LINK

<https://github.com/Vijayalakshmi-powerBI-kshmi>